

Patent Application of James J. D'Amato, P.E. for "Bi-directionally Driven Forward Converter for Neutral Point Clamping in a Modified Sine Wave Inverter" continued

Page 21

**ABSTRACT**

A bi-directionally driven forward converter for neutral point clamping in a modified sine wave inverter maintains wave shape integrity when the half bridge output is subjected to loads of varying impedances. This bi-directionally driven forward converter is supported by a dual primary coupled to a common secondary transformer of which both primaries are wound in opposition to each other. A high frequency snubbing pulse generator outputs a series of pulses coincidental with the turn off of the half bridge power transistors and pending the polarity of the modified sine wave output would permit current flow through either of the two primary windings. Given that the transformer secondary voltage is ultimately rectified, filtered, and tied to the input of the inverter itself, reflects back an impedance to the primary winding that is non-dissipative. The series of pulses emanating from the snubbing pulse generator ultimately suppresses any reverse voltage transients developed as a result of the load during the dead time of the modified sine wave output thereby maintaining the output wave shape under the most adverse applied conditions.